

CLAIMS

1. A kit for retrofitting an in ground lift having an antirotation tube with a load holding
2 device, comprising:

4 An elongated, cylindrical tube having the same outer diameter as an antirotation
tube for a lift;

6 a nut connected to said tube at one end thereof;

8 a plurality of first slots spaced at predetermined locations in one side of said tube;

10 a plurality of second slots spaced generally in alignment with corresponding ones
of said first slots and located on a side of said tube opposite said one side;

12 an additional slot in said opposite side and between said nut on the one hand and
said second slots on the other hand;

14 a plurality of elongated dogs each having a length greater than said outside
diameter, one for each aligned pair of said first and second slots;

16 a plurality of pivot pins, one for each dog, within the interior of said tube and each
journaling an associated dog for rotation about an axis mutually transverse to said tube
and a corresponding one of said aligned pairs of slots between a first position wholly
18 within said tube and a second position wherein opposite ends of said dogs extend out
of both the first and second slots of the associated pair, said axis and/or said dogs
further being such that each dog has more mass between said axis and one end of the
dog than the other end;

20 a manual actuator pivoted within said tube and movable between a first position
within said tube and a second position extending exteriorly of said tube and

22 a linkage connecting said actuator and each of said dogs and movable in
response to movement of said actuator to said actuator second position to allow

24 movement of said dogs from said dog second positions toward said dog first positions,
and responsive to movement of said actuator toward said actuator first position to allow
26 said dogs to move toward said dog second positions.

2. The kit of claim 1 wherein said linkage includes an elongated rigid link mounted
2 for reciprocal movement within said tube, and a plurality of cams spaced along the
length of said link at positions whereat they may be brought into engagement with a
4 corresponding one of said dogs to one side of the corresponding axis.

3. The kit of claim 2 wherein said link and said cams are located so as to engage
6 each said dog between its axis and its said other end to positively move each said dog
toward said dog first positions while allowing each dog to be biased toward said dog
8 second position by gravity.

4. The kit of claim 3 wherein said actuator is connected to said link by a lost motion
2 connection.

5. The kit of claim 2 wherein said actuator is connected to said link by a lost motion
2 connection.

6. A lift comprising:
2 A lift bed for engaging an object to be lifted;
3 a fluid cylinder connected to said lift bed and extendable and retractable to move
4 the lift bed between two extreme positions, including a fully lowered position and a fully
5 raised position; and
6 a latching mechanism for holding said lift bed in any of a plurality of positions
between said extreme positions including a plurality of vertically spaced latches

8 operated by gravity to move to latching positions, one for each of said plurality of lift bed
positions, and a single actuator for simultaneously moving and holding each of said
10 latches against gravity from said latching positions to allow said lift bed to be moved to
said fully lowered position.

7. The lift of claim 6 wherein each of said latches is a dog pivoted about a
2 substantially horizontal axis and said single actuator includes a lever having a lost
motion connection to each of said dogs.

8. The lift of claim 7 wherein said lift is an in-ground lift and said cylinder is generally
2 below ground when said lift bed is in said fully lowered position; an elongated
4 antirotation tube connected to said lift bed for movement therewith and parallel to said
cylinder; a below ground tube telescopingly receiving said antirotation tube and parallel
6 to said cylinder and having an open end at about ground level, said lever including a
manually operable end, said dogs and said lever being pivoted to said antirotation tube
8 and movable between positions wholly within said antirotation tube, and positions
projection outwardly of said antirotation tube and constructed to be cammed into said
10 antirotation tube when said actuator has been operated to move said dogs out of said
latching positions by engagement with the ground at ground level or with said open end
of said below ground tube.

9. The lift of claim 8 wherein said lost motion connection includes a link within said
2 antirotation tube and vertically movable by said lever and having a plurality of
4 engagement projections, one for each dog for engaging the associated dog and in
response to actuation of said lever, to move and hold said latches against gravity from
said latching position.

10. The lift of claim 9 wherein said engagement projections are free of connections
2 to said dogs.

11. The lift of claim 6 wherein said single actuator includes a manually operable lever
2 pivoted to said antirotation tube about a horizontal axis, an elongated link vertically
4 movable within said antirotation tube to engage and move said latches from said
6 latching positions, said lever being engageable with said link to move said link between
a first position engaging said dogs to move said dogs out of said latching position and
a second position out of engagement with said dogs to allow gravity to move said dogs
to said latching positions.

12. The lift of claim 11 wherein said lever includes a grippable end that extends out
2 of said antirotation tube when moving said link to said first position.

13. The lift of claim 12 wherein said lever and said link are constructed such that
2 grippable end pivots upwardly into said antirotation tube when said lever moves said link
toward said second position.